

# Review of Plant Pathology

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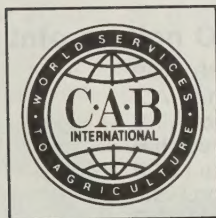
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Volume 72

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**CAB INTERNATIONAL DIVISION OF CROP PROTECTION AND GENETICS**

**in association with the  
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## **Review of Plant Pathology**

A monthly journal compiled from the CAB ABSTRACTS database.  
Produced by the DIVISION OF CROP PROTECTION AND GENETICS  
in association with the International Mycological Institute

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The journal is available at a special rate to subscribers in countries which make a financial contribution to CAB INTERNATIONAL. Orders and enquiries concerning subscriptions and back numbers should be sent to the Distribution Manager, Marketing & Distribution Services, at the above address.

The Department of Crop Protection also prepares: *Review of Agricultural Entomology, Nematological Abstracts, Weed Abstracts, Plant Growth Regulator Abstracts and Seed Pathology and Microbiology.*



# How to use Review of Plant Pathology

## ● Either **BROWSE**, using the **CONTENTS**

Within each issue, records are sequenced according to their principal subject matter – see **CONTENTS** page.

About three quarters of the records are arranged by **CROP**, so browsing is particularly useful to crop specialists. Within each crop, records are arranged in the order:

- general
- viruses, mycoplasma-like organisms, spiroplasmas, etc.
- fungi
- bacteria
- non-parasitic disorders.

## ● Or **SEARCH**, using the **INDEXES**

Subject indexes and author indexes are compiled monthly and cumulated annually.

### **SUBJECT INDEX**

This guides the user to all the records that make significant reference to specific topics, including the following:

#### **HOST PLANT SPECIES AND GROUPS**

English common names are used for major crops, scientific names for minor crops and other plants. Entries point to pathogen species and then to subject headings. Records that refer only to groups are indexed under group names, e.g. cereals, vegetables.

#### **PATHOGEN SPECIES AND GROUPS**

Pathogens are indexed under scientific names. Entries point also to host species and other subject headings. Records that refer only to groups are indexed under group names, e.g. bacteria, fungi.

#### **COUNTRY OR REGION**

For records where geographical occurrence is of particular relevance.

#### **AGROCHEMICALS** etc.

Including common or chemical names, with cross-references from proprietary names. Including chemical elements with well defined deficiency or toxicity syndromes.

#### **VECTORS**

#### **OTHER HEADINGS**

The main ones are listed here. Scan the **ANNUAL INDEX** for a more complete picture.

Acid rain	Economics of control	Phytoalexins	Seed testing*
Air pollution	Electron microscopy	Plant extracts	Seed treatment
Air spora	Fertilizers	Postharvest decay	Soil
Apparatus	Heat treatment	Records, geography	Soil treatment
Bibliographies	Host parasite relationships	Records, hosts	Spore dispersal
Biological control	Induced mutations	Regulation	Spore germination
Books	Mineral deficiencies	Reports	Storage decay
Conferences	Molecular genetics	Reviews	Storage disorders
Crop losses	Mycorrhizas	Quarantine	Techniques
Cultural methods	Mycotoxins	Seedborne organisms	*Viruses

\* All relevant records are indexed under viruses, subdivided by virus group name where appropriate. Records are also indexed under hosts and under individual virus names.

### **AUTHOR INDEX**

All authors of each paper are indexed alphabetically by surname. Variants of surnames are also indexed.



A TYPICAL RECORD

- 1) Abstract No.
- 2) Author
- 3) English translation of title
- 4) Title
- 5) Journal or other document
- 6) (Year) Volume (Part) pages
- 7) Language of text, any other language of summary
- 8) Address of first author
- 9) Abstract
- 10) Preferred name, if the author uses another name. (Names of fungal perfect states are preferred to those of imperfect states.)

2021 WELLACHER, M. [*Fusarium* species on cereals and  
maize from Austria.] *Fusariumarten auf Getreide und*  
*Mais aus Österreich, Pflanzenschutzberichte* (1991) 52 (1) 48-50 [De, en, 14 ref.] Central Bureau voor  
Schimmelcultures, P.O. Box 273, 3740 AG Baarn, Netherlands.  
*F. avenaceum* [*Gibberella avenacea*], *F. cerealis*, *F. culmorum*, *F. poae*, *F. sacchari* var. *subglutinans* and *Monographella nivalis* were isolated from 25 samples of oats, wheat, barley, rye and maize seeds harvested in different areas of Austria in 1990. *F. sacchari* var. *subglutinans* was the predominant taxon on all cereals and the only one found on maize, whereas *F. cerealis* was found only on one sample of wheat.

The title should be read as an integral part of the abstract.

TO OBTAIN A COPY OF THE ORIGINAL ITEM

Use the CAB International Document Delivery Service. A form is printed in this issue.

LIST OF JOURNALS CITED

The annual indexes include an alphabetical list of all journals cited during the year.

ABBREVIATIONS

A number of easily understood abbreviations are used (e.g. sp., species). Initial letters may be used for a virus after its full name has appeared. The following are also used:

a.e.	acid equivalent	EM	electron microscope	SDS	sodium dodecyl sulfate
a.i.	active ingredient	FW	fresh weight	SEM	scanning electron microscope
c.f.u.	colony-forming units	ID	infective dose		
conc.	concentrated	LC	lethal concentration	str.	strain
concn	concentration(s)	LD	lethal dose	w.p.	wettable powder
DW	dry weight	PAGE	polyacrylamide gel electrophoresis		
ED	effective dose				
ELISA	enzyme-linked immunosorbent assay	RH	relative humidity		
		RPP	Review of Plant Pathology		

In abbreviations for languages an initial capital denotes the language of the paper, an initial small letter the language of the summary.

Af	Afrikaans	En	English	Ja	Japanese	Pt	Portuguese
Al	Albanian	Eo	Esperanto	Ko	Korean	Ro	Romanian
Ar	Arabic	Es	Spanish	La	Latin	Ru	Russian
Az	Azerbaijani	Fi	Finnish	Li	Lithuanian	Sh	Serbo-Croat (either script)
Be	Byelorussian (White Russian)	Fr	French	Lv	Latvian	Sk	Slovak
Bg	Bulgarian	Gr	Greek	Ma	Macedonian	Sn	Slovene
Ch	Chinese	He	Hebrew	My	Malay and Bahasa Malaysia	Sv	Swedish
Cs	Czech	Hu	Hungarian	Nl	Dutch, Flemish	Ta	Tajik
Da	Danish	Ia	Interlingua	No	Norwegian	Tr	Turkish
De	German	In	Indonesian	Pe	Persian	Uk	Ukrainian
Ee	Estonian	Is	Icelandic	Pi	Polish		
		It	Italian				



# **CAB International Division of Crop Protection and Genetics**

## **How the crop protection abstract journals are compiled**

*Review of Agricultural Entomology*  
*Review of Plant Pathology*

*Nematological Abstracts*  
*Weed Abstracts*

### **Their purpose**

These four journals are designed to keep readers in touch with developments in the crop protection sciences, by abstracting the more important world scientific literature and by publishing review articles. A calendar of crop protection events is included. The abstracts are intended to be full enough for readers to decide whether they need to see the original documents.

### **The scale and diversity of the agricultural source literature**

Over 10,000 journals and other serial publications on agriculture and allied disciplines are received regularly by CAB International; these comprise more than 50,000 documents annually. Over 3000 books and other non-serials are also received each year. Publications are received from some 150 countries, in more than 50 languages. Even though English is increasingly the international language of science, some 40% of the literature is in other languages.

### **Scanning and abstracting the source literature of crop protection**

All these documents are scanned by CABI subject specialists and are available to the CABI Division of Crop Protection and Genetics. About 3000 journals, and numerous new books, are scanned regularly in the Division, whose staff includes specialists in entomology, plant pathology, nematology, weed science, plant genetics, and also linguists.

These specialists identify items within the scope of the four crop protection journals – broadly, scientific documents about agriculturally significant pests (invertebrates, plant pathogens and weeds), beneficial organisms, and relevant crop protection practices and products.

For each item, a record is created consisting of:

- bibliographic information
- an abstract, in English
- subject coding
- index terms.

### **The CAB ABSTRACTS database**

These records are added to the CAB ABSTRACTS bibliographic database. This machine-readable database contains all records published since 1973 in about 50 CABI abstract journals. The total of nearly 3 million records is growing by more than 150,000 new records per year, of which about 21,000 per year are on crop protection. The database is available to users for retrospective retrieval and for maintaining current awareness of literature on defined topics. See separate page, and inside back cover.

### **The crop protection abstract journals**

At intervals, relevant records newly added to the database are selected and become the basis for a new issue of one of the crop protection journals. Records are sorted into a standard sequence within each journal issue, according to subject matter. An author index and a subject index are generated. Cumulative indexes are generated at the end of each year.

### **Scientific links**

Each of the four crop protection journals has its own International Editorial Advisory Board of subject specialists. Their members advise on the content and development of the journals, and commission review articles of topical interest.

The CABI Division of Crop Protection and Genetics maintains close contact with the International Institute of Entomology (IIE), the International Mycological Institute (IMI), the International Institute of Parasitology (IIP) and the International Institute of Biological Control (IIBC). These links are especially important in providing the authority for the preferred names of pest organisms used in the journal indexes. IIBC is responsible for compiling the related abstract journal *Biocontrol News and Information*.

The Division of Crop Protection and Genetics is also in close contact with subject specialists in four other Divisions of the CABI Information Services who compile 45 abstract journals covering the rest of agriculture, forestry and allied disciplines. Comments from users are always welcome. Please write to Mr Geoffrey A. Viney, Division of Crop Protection and Genetics, CAB International, Wallingford, Oxon OX10 8DE, UK.



# CAB International Electronic Publications

## CAB ABSTRACTS Database

All of the abstracts and citations published in any of the CABI Abstract Journals are derived from a computerised database known as CAB ABSTRACTS. The database, containing over 2.7 million records, and its various subsets are available in several electronic formats, as follows.

### Online

- Publicly available worldwide through the following online hosts:
  - ✧ DIALOG
  - ✧ CAN/OLE
  - ✧ DIMDI
  - ✧ ESA-IRS
  - ✧ DataStar
  - ✧ STN

### Electronic Journals

- All CABI Abstract Journals on floppy disk, in comma-delimited, Pro-Cite or ISO2709 format.
- Update frequency is the same as for the printed journal.
- Data available on either 3.5" or 5.25" high density diskettes.

### CD-ROM (Compact Disc Read Only Memory)

#### CABCD

- Three volumes containing the entire CAB ABSTRACTS database since 1984.

#### CAB SPECTRUM

- An array of subject-specific CD-ROMs.
- VETCD** – 20 years of information on Veterinary Science and Animal Health.
- BEASTCD** – 20 years of information on Animal Production and Dairy Technology.
- TREECD** – 50 years of information on Forestry, Agroforestry & Forest Products.
- CABPESTCD** – 20 years of information on Crop Protection.
- SOILCD** – 20 years of information on Soils, Water and Land Management.
- HORTCD** – 20 years of information on Horticulture, Ornamental Horticulture and Plantation Crops.

#### CAB COLLECTION

- PolTox III:CAB** – Environmental pollution and toxicology information since 1983.
- Human Nutrition on CD-ROM** – 10 years of data from CAB ABSTRACTS, FSTA, Medline and the Life Sciences Collection.

### Current Awareness

#### SDI Service

- Based on the most recent input to the CAB ABSTRACTS database.
- Subscribers decide their own search profile.
- Monthly search results on computer printout or floppy disk.
- Full bibliographic details and informative abstracts for the records retrieved.

#### CAB Alerts

- Similar to the SDI service, but with titles and search strategies chosen by CABI staff.
- Monthly output is provided on computer printout.

### Retrospective Searches

- An online retrospective search of the CAB ABSTRACTS database.
- Provides citations and abstracts to published papers in the subject area of choice.
- Search output is available on computer printout or floppy disk.

For more details of these, or any other CABI Electronic Publications, contact the Marketing Manager for Electronic Publications, CAB International, Wallingford, Oxon OX10 8DE, UK.



# INTERNATIONAL MYCOLOGICAL INSTITUTE

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The International Mycological Institute (IMI), with a staff of about 65 and an annual budget of £1.9m, is the largest centre concerned with systematic mycology in the world. Founded in 1920, the Institute has from the first provided world services to mycologists and workers in related disciplines, particularly plant pathology, medical and veterinary mycology, and now also in industrial mycology, biodeterioration, biodiversity and biotechnology.

## Biosystematic & Identification Services

Correct diagnosis of the cause of a disease, spoilage, or industrial problem is the first step in finding an appropriate solution. IMI provides a reliable, up-to-date identification service for about 4500 cultures and specimens each year, received from a wide variety of sources.

Staff are involved in wide-ranging research programmes on microfungal systematics. They produce about 70 scientific papers each year and also compile the *Dictionary of the Fungi*, *Index of Fungi*, *Bibliography of Systematic Mycology*, *Systema Ascomycetum*, *Descriptions of Fungi and Bacteria*, *Distribution Maps of Plant Diseases*, *Mycological Papers* and *Phytopathological Papers*.

Information on the submission of material and details of charges are available on request.

## Genetic Resources Reference Collection

This Collection, which incorporates the UK National Collection of Fungus Cultures, maintains over 17,000 strains; it is one of the largest service collections for fungus cultures in the world. Plant bacteria and yeasts are also maintained.

Cultures are available for sale world-wide for industrial, scientific and educational use, and metabolic and physiological data on the strains held are actively added to the collection's databank.

The 10th edition of the Catalogue is available free of charge and lists over 11,000 strains available from the open collection. Additions to the collection are welcome, especially of fungi otherwise not represented in the collection or of biochemical, economic and industrial importance.

The Collection is recognized as an International Depositary Authority for patent strains of fungi and bacteria under the terms of the Budapest Treaty.

## Training Services

IMI offers a wide variety of training activities, ranging from postgraduate research degrees to one-day specialist seminars. Each year about eight longer courses, including an annual six-week International Course on the Identification of Fungi of Agricultural Importance, are held.

Overseas workshops, individual training and tuition for mycologists, plant pathologists and industrial staff are also arranged. Visiting research scientists are welcome to spend time at the Institute as part of their research work.

## Plant Protection Services

The Institute's Plant Protection Laboratory incorporates the UK Overseas Development Administration Plant Pathology Liaison Unit. Backed by the expertise and information available within IMI, it provides disease diagnosis, technical support, and consultancy services for agricultural scientists, advisers, growers and shippers worldwide. Research is also undertaken, primarily on specific problems relating to pathogen variability and characterization.

## Further details

Please write, fax or telephone for our current Services and Publications booklet and any further information on specific services that you may require. All work is carried out by IMI on a confidential basis, and we will be pleased to discuss your individual requirements without obligation.

## Consultancy & Contract Services

IMI is able to undertake consultancy assignments involving surveys of disease or other problems, and offers consultancy and contract research in any of its fields of activity. Staff can also assist in the preparation of mycological publications on a contract basis.

## Industrial & Environmental Laboratory

The laboratory is accredited under the UK National Measurement Accreditation Service (NAMAS) and carries out a wide variety of industrial testing, contract research and consultancies involving non-food materials. Services involving organisms other than fungi can also be arranged, and a tropical testing facility is available.

## Yeast Investigations Laboratory

A specialist laboratory, headed by Professor R. R. Davenport, has been established in IMI. It provides consultancy, investigatory contract research and training facilities related to specific needs of the food and beverage industries, both in the UK and overseas.

## Food Investigation

IMI's long-standing involvement in the food industry is now focussed through its Food Group, covering filamentous fungi, yeasts and bacteria. We offer producers, processors, manufacturers and distributors a comprehensive, confidential, microbiological service, including on-site investigations and training. For information resources, IMI has access to the International Food Information Service (IFIS).

## Biochemistry & Molecular Biology Services

The Biochemistry & Molecular Biology Laboratory acts as a service unit within the Institute for routine and project work. Techniques currently available include detection and screening of fungal enzymes and secondary metabolites (including mycotoxins) and a number of methods for characterizing strains and taxa at a molecular level.

## Bacteriology Laboratory

The laboratory offers a specialist identification service for plant pathogenic, biocontrol and industrially significant bacteria. Techniques currently available include quantitative fatty acid analysis, physiological test methods and molecular techniques involving the polymerase chain reaction (PCR).

## Information

The IMI library holds a unique collection of literature on plant pathology, fungal systematics, medical and veterinary mycology, biodeterioration and fungal biotechnology. Its stocks consist of approximately 750 current journals, 7,000 volumes and books and 140,000 reprints.

Literature searches and studies can be carried out to specific individual requirements, and a photocopy service is also available to provide copies of original source literature.



Review of  
Plant  
Pathology

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Sweet potatoes .....	48	114	177	250	330	432	525	614	701	788	879	979
Yams .....	-	114	-	-	-	432	525	-	701	-	-	-
Colocasia .....	48	114	177	-	-	432	-	-	-	788	879	-
Other root crops .....	48	-	177	-	-	-	525	614	-	788	880	979
LEAFY VEGETABLES, BULBOUS VEGETABLES, STEM VEGETABLES .....												
Allium .....	49	115	177	250	330	432	526	615	702	788	880	979
Brassica .....	49	115	177	250	331	433	526	615	703	788	880	980
Spinach .....	-	-	-	-	332	-	-	616	-	-	-	981
Celery .....	-	-	-	251	-	434	-	-	-	-	-	-
Lettuces .....	49	116	178	251	332	434	528	-	703	790	881	981
Other leafy, bulbous and stem vegetables (including asparagus and rhubarb) .....	50	116	178	251	333	434	529	616	703	790	881	982
FRUIT VEGETABLES .....												
Tomatoes .....	50	117	178	251	333	435	529	617	704	790	881	984
Aubergines .....	-	118	179	-	336	437	531	-	707	793	884	988
Capsicum .....	51	118	179	253	336	437	532	619	707	793	885	988
Cucurbitaceae .....	51	119	180	254	336	437	532	620	709	794	885	989
Other fruit vegetables .....	52	-	181	255	-	-	-	623	710	796	887	991
TEMPERATE FRUITS .....												
Pome fruits .....	53	120	181	255	339	441	534	623	710	797	888	992
Stone fruits .....	53	122	182	257	343	443	535	624	712	799	890	993
Small fruits .....	54	123	183	258	343	445	536	626	712	800	891	994
Grapes .....	55	123	183	259	344	445	537	627	713	801	893	994
Other temperate fruits .....	56	-	184	260	346	446	538	627	716	802	894	995
TROPICAL AND SUBTROPICAL FRUITS .....												
Bananas .....	56	124	184	260	346	447	539	627	716	802	895	996
Citrus .....	57	125	184	260	347	447	539	628	717	803	895	996
Mangoes .....	58	125	185	262	348	448	541	629	718	805	896	997
Pineapples .....	58	-	-	-	349	-	541	-	-	-	-	-
Litchi .....	-	-	-	-	349	448	-	-	-	-	-	-
Other tropical and subtropical fruits .....	59	125	185	262	350	448	541	630	718	805	896	997
NUT CROPS .....												
FATTY OIL PLANTS .....	59	126	186	264	351	449	542	631	720	807	898	999
Rape .....	59	126	186	264	351	449	542	631	720	807	898	999
Sinapis .....	-	-	-	-	-	-	-	-	-	-	-	-
Linseed .....	-	-	-	265	352	449	-	632	721	-	-	999
Sunflowers .....	60	127	187	265	352	450	543	632	721	807	898	999
Safflower .....	-	-	187	266	353	-	544	632	-	-	898	-
Oil palms .....	-	127	-	266	353	-	544	632	721	808	-	-
Coconuts .....	60	127	187	267	353	-	-	632	-	808	899	1000
Olives .....	-	-	-	-	-	450	544	-	721	808	899	-
Groundnuts .....	61	127	188	267	354	450	544	632	722	808	899	1000
Castor beans .....	61	-	-	268	-	-	545	633	-	-	-	-
Sesame .....	-	128	-	268	-	-	-	633	723	809	901	1002
Other fatty oil plants .....	-	-	-	-	-	-	-	-	-	-	901	-
SUGAR CROPS .....												
Sugarcane .....	61	128	188	268	355	451	545	633	723	810	901	1003
Sugarbeet .....	61	128	188	268	355	451	545	633	723	810	901	1003
Sugarbeet .....	61	129	189	268	356	452	545	634	723	811	902	1003
Other sugar crops .....	-	-	-	-	-	-	-	-	-	-	-	-



<b>STIMULANT PLANTS</b> .....	62	130	189	269	357	453	546	634	724	811	903	1004
Tea .....	62	-	-	-	-	453	546	-	-	-	-	-
Coffee .....	63	-	189	269	-	453	546	634	724	811	903	-
Cocoa .....	63	130	189	269	357	453	546	-	-	811	904	1004
Tobacco .....	64	130	190	269	357	453	548	635	724	811	905	1004
Other stimulant plants .....	-	-	-	-	-	-	-	-	-	-	-	-
<b>FIBRE PLANTS</b> .....	65	131	192	271	359	455	552	637	725	813	907	1008
Cotton .....	65	131	192	271	359	455	552	637	725	813	907	1008
Flax .....	66	-	192	-	360	457	-	638	726	814	908	-
Jute .....	-	131	-	-	-	-	553	-	-	-	908	1008
Sisal .....	-	-	-	-	-	-	-	-	-	-	-	-
Other fibre plants .....	66	132	-	-	-	-	553	638	726	-	-	1008
<b>RUBBER PLANTS</b> .....	66	132	-	272	-	457	553	638	726	814	908	1009
<b>FOREST TREES</b> .....	66	132	193	273	360	458	553	639	726	814	908	1009
Broadleaves .....	67	133	194	274	361	458	554	640	727	815	908	1011
Conifers .....	68	134	195	275	363	460	557	642	728	818	911	1013
<b>ORNAMENTAL PLANTS</b> .....	69	136	197	277	366	461	560	642	730	820	913	1016
<b>MEDICINAL PLANTS, PESTICIDAL PLANTS, SPICE PLANTS, CULINARY HERBS, ESSENTIAL OIL PLANTS, INDUSTRIAL CROPS</b> .....	71	137	199	278	368	462	563	645	733	822	916	1017
<b>EDIBLE FUNGI</b> .....	72	137	200	-	-	463	-	647	-	823	-	1019
<b>PTERIDOPHYTA, BRYOPHYTA, ALGAE, LICHENS</b> .....	-	137	200	-	369	-	-	647	-	824	-	-
<b>WILD PLANTS</b> .....	72	-	200	279	369	464	564	647	733	824	917	1019
<b>WEEDS</b> .....	72	137	201	279	369	464	565	648	733	824	917	1020
<b>REPORTS</b> .....	73	-	-	280	370	465	565	-	-	-	-	1022
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(Note: under each crop, abstracts are arranged in the order: general; viruses, mycoplasma-like organisms, spiroplasmas, etc.; fungi; bacteria, non-parasitic disorders.)



